IN THE CLAIMS

1. (Canceled)

2. (Currently amended) A communications receiver as set forth in claim ~~1~~15 wherein the means for converting the wide band carrier to baseband in I and Q components ~~dividing the detected band into sub-bands~~ comprises means for mixing the radio signal with a single local oscillator output to downconvert the radio signal to the frequency at which the processing is to occur, and subsequently dividing the downconverted signal into the sub-components ~~with bandwidth equal to the sub-bands~~ for independent and simultaneous processing.

3. (Currently amended) A communications receiver as set forth in claim ~~1~~15 wherein the means for converting the wide band carrier to baseband in I and Q components ~~dividing the detected band into sub-bands~~ comprises means for mixing the radio signal with a single local oscillator output to downconvert the radio signal to an intermediate frequency, and subsequently dividing the downconverted signal into the sub-components ~~with bandwidth equal to the sub-bands~~ for independent and simultaneous processing.

4. (Currently amended) A communications receiver as set forth in claim 2 wherein the means for converting the wide band carrier to baseband in I and Q components ~~dividing the detected band into components with bandwidth equal to the sub-bands further~~ comprises means for mixing the downconverted signal with locally generated signals to produce the sub-components.

5. (Original) A communications receiver as set forth in claim 4 where the mixing with the locally generated signals uses multiplier DAC's with the digital input driven by the low frequency digital local oscillator signals.

6. (Original) A communications receiver as set forth in claim 5 where the multiplier DAC's provide Gain Control for Automatic Gain Adjustment.

7. (Currently amended) A communications receiver as set forth in claim 4 wherein the means for processing that portion of the information contained in each of the sub-components ~~with bandwidth equal to the sub-bands~~ comprises an analog to digital converter.

8. (Original) A communications receiver as set forth in claim 7 wherein the analog to digital converter is a sigma-delta analog to digital converter with a programmable oversampling ratio for Wideband or Narrow band conversion.

9. (Canceled)

10. (Currently amended) A method as set forth in claim ~~9~~ 16 wherein converting the wide band carrier to baseband in I and Q components ~~subdividing the detected band into sub-bands~~ comprises mixing the radio signal with a single local oscillator output to downconvert the radio signal to the frequency at which the processing is to occur and subsequently dividing the downconverted signal into the sub-components ~~with bandwidth equal to the sub-bands~~ for independent and simultaneous processing.

11. (Currently amended) A method as set forth in claim 169 wherein converting the wide band carrier to baseband in I and Q components ~~subdividing the detected band into sub-bands~~ comprises mixing the radio signal with a single local oscillator output to downconvert the radio signal to an intermediate frequency and subsequently dividing the downconverted signal into the sub-components ~~with bandwidth equal to the sub-bands~~ for independent and simultaneous processing.

12. (Currently Amended) A method as set forth in claim 10 wherein converting the wide band carrier to baseband in I and Q components ~~dividing the detected band into components with bandwidth equal to the sub-bands further~~ comprises mixing the downconverted signal with locally generated signals to produce the sub-components.

13. (Currently Amended) A method as set forth in claim 12 wherein processing that portion of the information contained in each of the sub-components ~~with bandwidth equal to the sub-bands~~ comprises an analog to digital conversion.

14. (Currently Amended) A method as set forth in claim 13 wherein the analog to digital conversion~~ter~~ is a sigma-delta analog to digital conversion~~ter~~ with a programmable oversampling ratio for Wideband or Narrow band processing.

15. (Currently Amended) A communications receiver adapted to receive and process information transmitted as either a wide band signal or a narrow band signal having In-phase-Quadrature-phase (IQ) modulation of a carrier, comprising:

means for detecting a portion of the spectrum wide enough to encompass the bandwidth (BW) of a wide band carrier signal

means for converting the wide band carrier to baseband in I and Q components, each component having a bandwidth of BW/2, and

~~means~~ for converting the I and Q components into further I and Q components to form sub-components II, IQ, QI, and QQ, where each of the sub-components has a bandwidth of BW/4- and may contain a portion of the originally transmitted information,

means~~,~~ operable in a wideband mode for separately processing each of the sub-components to extract portions of the originally transmitted information, and

means~~,~~ operable in a narrowband mode for separately processing each of the sub-components containing information within the narrow band transmitted carrier to extract portions of the originally transmitted information, and

means for recombining the extracted information to reconstruct the originally transmitted information.

16. (Currently Amended) A method for receiving and processing information transmitted on either a wide band carrier or a narrow band carrier having In-phase-Quadrature-phase (IQ) modulation, comprising:

detecting a portion of the spectrum wide enough to encompass the bandwidth (BW) of a ~~the~~ wide band carrier (BW),

converting the wide band carrier to baseband in I and Q components, each component having a bandwidth of BW/2,

converting the I and Q components into further I and Q components to form sub-components II, IQ, QI, and QQ, where each of the sub-components have a bandwidth of BW/4 and may contain a portion of the originally transmitted information,

in a wideband mode, separately processing each of the sub-components to extract portions of the originally transmitted information, and

in a narrowband mode, separately processing each of the sub-components containing information within the narrow band transmitted carrier to extract portions of the originally transmitted information,

recombining the extracted information to reconstruct the originally transmitted information; and

where the paths of two sub-components are disabled in Narrow band mode.

17. (Previously canceled)

18. (Currently amended) A method as set forth in claim 16 where Digital gain and phase correction for the four sub-components is performed in combination with the complex mixing with the digital local oscillator during the recombination process.

19. (Original) A method as in claim 18 where Phase discontinuity is removed by phase shifting the digital local oscillator during the recombination process.